

Date: Fri, 30 Apr 93 04:30:27 PDT  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V93 #520  
To: Info-Hams

Info-Hams Digest                      Fri, 30 Apr 93                      Volume 93 : Issue    520

Today's Topics:

.85 AH Radio Shack Nicads (2 msgs)  
Differential equations and power.  
    DX Bulletin 21    ARLD021  
Experience with W&W Associates?  
    FT-530 out of band TX..  
    Helical filters for HT's  
    Space Bulletin 025    ARLS025  
    Special Bulletin 5    ARLX005

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Fri, 30 Apr 1993 01:57:06 GMT  
From: usc!cs.utexas.edu!uwm.edu!ux1.cso.uiuc.edu!news.cso.uiuc.edu!  
meishan.animal.uiuc.edu!ignacij@network.UCSD.EDU  
Subject: .85 AH Radio Shack Nicads  
To: info-hams@ucsd.edu

Lately Radio Shack began selling .85 AH Nicads at \$5.95 a pair.  
Previously they carried only .6 AH nicads at \$4.50 a pair. The new  
nicads carry a warning that they may discharge in 60 days. Since  
the increase of capacity from .6 to .85AH is substantial, I wonder  
if they are made by a distinctly different technology. Perhaps they are  
not nicads at all. Perhaps they are NiMH batteries. I use them in my HT  
and they seem to last real long.

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Ignacy Misztal        N09E, SP8FWB    E-mail: ignacy@uiuc.edu

University of Illinois      Phone: (217) 244-3164  
1207 W. Gregory Dr.  
Urbana, IL 61801

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Date: Fri, 30 Apr 1993 10:33:21 GMT  
From: sdd.hp.com!portal!schuster@network.UCSD.EDU  
Subject: .85 AH Radio Shack Nicads  
To: info-hams@ucsd.edu

In article <ignacij.736135026@meishan.animal.uiuc.edu>  
ignacij@meishan.animal.uiuc.edu (Ignacy Misztal) writes:  
>Lately Radio Shack began selling .85 AH Nicads at \$5.95 a pair.  
>Previously they carried only .6 AH nicads at \$4.50 a pair. The new  
>nicads carry a warning that they may discharge in 60 days. Since  
>the increase of capacity from .6 to .85AH is substantial, I wonder  
>if they are made by a distinctly different technology. Perhaps they are  
>not nicads at all. Perhaps they are NiMH batteries. I use them in my HT  
>and they seem to last real long.

My experiences with NiMH cells tells me that this cannot be true.  
NiMH cells require differenmt charging circuits to get full capacity,  
and these 850's are drop-in replacements for lower capacity nicads.

--

Mike Schuster            | schuster@shell.portal.com | 70346.1745@CompuServe.COM  
----- |            schuster@panix.com | GEnie: MSCHUSTER

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Date: Thu, 29 Apr 1993 23:25:25 GMT  
From: usc!cs.utexas.edu!swrinde!emory!news-feed-1.peachnet.edu!bogus.sura.net!  
udel!news.intercon.com!psinnntp!witch!comet!ttrostel@network.UCSD.EDU  
Subject: Differential equations and power.  
To: info-hams@ucsd.edu

>"Energy is stored in the magnetic field of an inductor when current  
>increases through it..."  
>  
>Energy =  $K \cdot I'$     ?  
>  
>What symbol is used for energy? Does the constant K relate to the inductance?  
>What other factors would it relate to?

Ok ... The energy that produces magnetic fields is contained in the

movement of electrons through a coil (the current). The magnetomotive force, or simply "mmf", is the force that produces that magnetic \*flux\* within a coil. The flux is the density of the magnetic field.

The magnetomotive force can be calculated by multiplying the number of turns of conductor by the current flowing through it. IE:

$$\text{mmf} = \text{current} * \text{turns}$$

mmf is usually measured in weird little units called \*gilberts\* where:

$$1 \text{ Gb} = 0.796 * (\text{current in amps}) * \text{turns}$$

At the ends of any given coil the magnetic field intensity drops off as it spreads. Within the coil the flux is generally extremely uniform. A practicle unit used for measuring this is to measure the mmf for a given unit of coil length. The general unit used here is an \*oested\* or \*Oe\* where:

$$1 \text{ Oe} = 1 \text{ Gb/cm}$$

If we wind a coil and let it sit on our kitchen table the air filled space inside the coil will allow a particular magnetic flux density to build up. If we slide a piece of iron inside the coil we find that the magnetic flux density increases. With the iron core the magnetic field has an affinity for the iron which almost "pulls" it away from the conductor.

If we were to compair the ability of one material to accept magnetic energy to another a logical place to start would be good old fassion air. A quick example would be a magnetizing force \*H\* of say 50 Amps \* turns/in. This would produce a magnetic flux \*B\* of 50 units/in^2 in the air core. In a good ole fassion iron core the same flux density might be perhaps 500,000 units/in^2!!!

The ratio of B to H or B/H is called permiability \*u\* (that's a mu if I could type it).

I don't know if that makes it any easier or not but that's as much as I can do tonight without blowing a fuse or something. If your interested and I'm doing a fairly good job tell me and I'll be happy to write something quickly about capacitance.

BTW I'm paraphrasing some of this from "Electronic Communication" by Robert L. Shrader. [Macmillan/McGraw-Hill] spicing it up where needed. If you want to check it out of the local college

library it does a fairly good job. I'd give you the stuff out of my higher level physics books but that stuff still confuses me too!

Later Gator!

ttrostel@comet.win.net

\*Of all the things I miss my mind the most\*

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Date: Fri, 30 Apr 93 08:33:01 GMT  
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!  
zaphod.mps.ohio-state.edu!mstar!n8emr!bulletin@network.UCSD.EDU  
Subject: DX Bulletin 21 ARLD021  
To: info-hams@ucsd.edu

=====  
| Automatic relayed from packet radio via |  
| N8EMR's Ham BBS, 614-895-2553 |  
=====

ZCZC AE47  
QST de W1AW  
DX Bulletin 21 ARLD021  
>From ARRL Headquarters Newington CT  
April 30, 1993  
Relayed by KB8NW/OBS & BARF-80 BBS  
To all radio amateurs

SB DX ARL ARLD021  
ARLD021 DX news

Thanks to the YCCC PacketCluster Network and Pete, KB1HY, for the items in this week's bulletin.

UGANDA. At the rate things are going, this one will probably move out of the top ten most wanted countries list for Dxers. 5X1XX has been very busy working 30 and 17 meter CW. 5X1A and 5X1B have been handing out their fair share of Qs, too. For the data crowd, 5X1XT is on 20 meter RTTY.

LOW BAND REPORT. Despite certainly not being in the prime time of the year for DXing on 160 meters, some good pickings are around for the patient. Northeastern amateurs have worked CE8ABF on both CW and SSB. Listen between 1835 and 1840 kHz for this one. Other goodies include SV8ZS on 1828 kHz and 0304z, ZP5JCY on 1832 kHz at 0237z, and EI5HJ on 1833 kHz at 0035z.

80 METER REPORT. The approach of Summer doesn't seem to have had much affect yet on this band. New Englanders have worked ZL3ABV at 1010z, JA1HQT at 0957z and CX4GL at 0933 and 0346z with CW. SSB catches include CP5NU at 0138z, VP2EY at 0240z, ZP5PT at 0131 and 0200z, PY5CC at 0134z, and PY2HC at 0100z.

40 METER REPORT. Operating sunset and sunrise times is productive on this band. Recent finds include 5B0/DL6SDW at 2344z, ZL1ST at 1041z, and JH1GRG between 0900 and 1030z, all operating CW.

30 METERS continues to provide good DX all year long. Some of the better finds have been VK6RO at 1103z, OY1CT at 0029z, ZK3RW at 0529z, 5X1XX at 0340z, 3B8FG at 0327z, 5X1XT at 0321z, and 7P8SR at 0205z.

20 METER REPORT. For CW buffs, listen for BV4JB on 14032 kHz at 1340z, VK5ML on 14043 kHz at 1011z, and VR6BB on 14025 kHz at 0626z. For SSBers, listen for VK8YL on 14226 kHz between 1130 and 1215z, 9M2MW on 14245 kHz at 1032z, AND VR6BX on 14260 at 0535z.

17 METER REPORT. This band offers T30JH on West Kiribati operating SSB on 18155 kHz around 0350z. Also look for 5X1XX around 18070 kHz between 2300 and 0100z.

15 METER REPORT. YB1ARW can be found on 21294 kHz SSB around 1400z. OD5/SP7LSE continues to be active from Lebanon. Check 21015 kHz CW around 1400z.

12 METER REPORT. PacketCluster spots are few and far between for this band. However, ZL2ANT was worked on 24900 kHz at 2315z, and ZK2X0 on 24895 kHz at 2227z, both from the east coast. Not bad for a dead band.

10 METER REPORT. And if you think 10 meters is dead until the next sunspot peak, think again. Don't forget that a band that is wide open can sound dead if there is no one transmitting. The moral? When in doubt, call CQ. Here is a list of some DX worked during the past week.

|        |                                |
|--------|--------------------------------|
| C91S   | on 28480 kHz at 1345 and 1623z |
| VK2NO  | 28355/0101                     |
| VR6JJ  | 28490/0055                     |
| PZ1CZ  | 28446/1752                     |
| 3X0HLU | 28470/1431                     |
| ZS6MI  | 28440/1220                     |
| ZL3AZ  | 28455/0154                     |
| ZL2X0  | 28027/2055 and 2114            |

SATELLITE REPORT. Enthusiasts of orbiting artificial propagation mention working the Italian DXpedition to Liechtenstein; TA1D in Turkey; OY1CT on the Faroe Islands; UL7 and UY8.

THIS WEEKEND ON THE RADIO there is a little something for just about everyone. The DXYL/NAYL phone contest wraps up on the 29th. See March QST, page 110 for details. Saturday ushers in the 0600 local time start of the ARRL UHF Sprints on 902, 1296 and 2304 MHz. See March QST, page 110 for further information.

On Saturday and Sunday there is even more to choose from. To wit, the ARI International DX contest, MARAC County Hunters CW contest, Oregon QSO Party, Ten-Ten International Net Spring CW QSO Party, and the Texas QSO Party. Whew. The particulars for these events are on page 106 of April QST.

And if that wasn't enough, Sunday, May 2 will be a prime for EME contacts.

NNNN

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Date: Fri, 30 Apr 1993 05:21:11 GMT  
From: panix!dannyb@nyu.arpa  
Subject: Experience with W&W Associates?  
To: info-hams@ucsd.edu

I've used them (they're located here in the nyc area) and have had good results. prices are pretty decent and they have lots of their stuff in stock.

they'll also put together a custom pack and not be -too- outrageous.

dannyb@panix.com

usual discliamers apply...

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Date: Thu, 29 Apr 93 20:05:55 EDT  
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!  
zaphod.mps.ohio-state.edu!malgudi.oar.net!wariat.org!wariat.org!dreaml!  
jga@network.UCSD.EDU  
Subject: FT-530 out of band TX..  
To: info-hams@ucsd.edu

Well, a friend of mine and I were testing the TX range of a Yaesu FT-530, once it was modded on one of his commercial repeaters.. (he's a tech for a local commercial radio business) Anyhow, we discovered that it unlocks as

far as TX is concerned at about 459 MHz on UHF. Is there a second mod for this, or is this just the way it is? (I suspect it's the way it is.)

Thanks, and 73!

-J  
/ex

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|   |   |   |   -Jon Anhold N8USK- @ Dreamland Network Systems  
+--*+---+---+ (dreaml!jga) (jga@dreaml.wariat.org) AMPR: N8USK @ N08M  
| # |   |   |   <"Wouldn't it be great if George Bush booby trapped the White>  
| #           <           House like the kid in Home Alone 2?"           >
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Date: 30 Apr 1993 09:21:33 +0300  
From: mcsun!news.funet.fi!butler.cc.tut.fi!lehtori.cc.tut.fi!not-for-mail@uunet.uu.net  
Subject: Helical filters for HT's  
To: info-hams@ucsd.edu

alanb@sr.hp.com (Alan Bloom) writes:

> I bet you could transmit a 2-watt HT through the helical resonator.  
> Of course, you might not want to bet \$25 on it!

The Toko 2 m helical filters can handle 5 W, while the 70 cm types only 0.5 W.

The insertion loss is 2.5 - 8 dB depending on filter type. If you put (on 2 m) the helical filter directly in the antenna cable between your HT and an external antenna, you can still radiate 1 W (assuming 2 W HT and 3 dB insertion loss in the filter). The sensitivity will drop by 3 dB, but as the main problem was intermod, this loss should be acceptable particularly on 2 m when the external noise level is much higher. An added benefit is that this filter reduces harmonics from the transmitter.

If you are using an external power amplifier, you could put the filter between the HT and the amplifier assuming the amplifier is sensitive enough to deliver full output power at the reduced (1 W) input power.

If you are willing to do some modifications to an external power amplifier with a built in pre-amplifier, the helical filter should be inserted between the output of the pre-amplifier and the relay that is delivering the received signal to the HT.

Assuming that the pre-amp has been designed properly (some input selectivity and high stand-by current) this added filter should remove most intermods from out-of-band (pagers etc.) signals.

However, if there are strong in-band signals (other close by hams with high power), any pre-amplifiers in front of a HT will cause severe intermods between these signals. If you install the filter after the pre-amp, you should add an attenuator (3 resistors) between the pre-amplifier and filter, so that the received signal at the HT is only slightly larger than at the pre-amplifier input. If the pre-amp gain is 20 dB, filter loss 8 dB and cable loss 3 dB between the pre-amp and the HT, the attenuator should be 9 dB (=20-8-3). If there are not many strong in-band signals, the attenuator could be in the 4-9 dB range to prevent degrading the total noise figure (sensitivity) too much.

Paul OH3LWR

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SF-33200 TAMPERE  
FINLAND

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Date: Fri, 30 Apr 93 08:33:00 GMT  
From: usc!zaphod.mps.ohio-state.edu!mstar!n8emr!bulletin@network.UCSD.EDU  
Subject: Space Bulletin 025 ARLS025  
To: info-hams@ucsd.edu

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| Automatic relayed from packet radio via |  
| N8EMR's Ham BBS, 614-895-2553 |  
=====

ZCZC AS05  
QST de W1AW  
Space Bulletin 025 ARLS025  
>From ARRL Headquarters Newington, CT  
April 29, 1993  
Relayed by KB8NW/OBS & BARF-80 BBS  
To all radio amateurs



SB Space ARL ARLS025  
ARLS025 SAREX update

NASA reports that STS-55 orbiter power is being conserved. This will result in somewhat limited packet operations, although voice operations will continue. Best advice for uplinking to Columbia is to transmit on appropriate uplink frequencies once you hear SAREX operations downlinked on 145.55.

Don't forget the SAREX and SAFEX antenna tests will occur on orbit 61 on April 30 at 0857 UTC and ORBIT 62 on April 30 at 1030 UTC.  
NNNN

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Date: Fri, 30 Apr 93 08:33:00 GMT  
From: usc!zaphod.mps.ohio-state.edu!mstar!n8emr!bulletin@network.UCSD.EDU  
Subject: Special Bulletin 5 ARLX005  
To: info-hams@ucsd.edu

=====  
| Automatic relayed from packet radio via |  
| N8EMR's Ham BBS, 614-895-2553 |  
=====

ZCZC AX14  
QST de W1AW  
Special Bulletin 5 ARLX005  
>From ARRL Headquarters Newington CT  
April 30, 1993  
Relayed by KB8NW/OBS & BARF-80 BBS  
To all radio amateurs

SB SPCL ARL ARLX005  
ARLX005 VK1RH, SK

ARRL HQ regrets to report that Ron Henderson, VK1RH, President of the Wireless Institute of Australia, became a silent key on April 26. An active amateur operator and administrative leader, Ron's untimely death was the result of cancer. He attended the full term of WARC-92 as a delegate from Australia and participated in the 1985 conference in Melbourne. He was a strong supporter of amateur radio and the ARRL. The ARRL and IARU express their deepest sympathy to Ron Henderson's family, the WIA and to his many friends around the world.  
NNNN

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Date: 30 Apr 93 03:31:05 GMT  
From: ogicse!mintaka.lcs.mit.edu!rwed@network.UCSD.EDU  
To: info-hams@ucsd.edu

References <1993Apr21.224157.3916@csdvax.csd.unsw.edu.au>,  
<Zkuk3B2w165w@jackatak.raider.net>, <1993Apr27.200819.3257@unet.net.com>  
Subject : Re: AM Modulation Question

And Radio New Zealand International uses Dynamic Amplitude Carrier  
Modulation. The final RF stage of their transmitters uses Duration  
Modulated Pulses. (sounds suspiciously like PWM to me).  
Comes from 3 TH581 tubes. 100kw. Great station.

--  
rwed@gnu.ai.mit.edu; N7YVM/AA, negadittohead, and some other stuff  
Disclaimer from American Public Radio's "What Do You Know":  
The opinions expressed here are well thought out and  
insightful and, needless to say, are not those of my employer.

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End of Info-Hams Digest V93 #520  
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